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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/787,078

02/27/2004

Kazuya Hayashibe

SON-2938

5485

23353

7590

10/25/2006

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EXAMINER

FLORES RUIZ, DELMA R

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 10/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/787,078

Applicant(s)

HAYASHIBE ET AL.

Examiner

Delma R. Flores Ruiz

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-8 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

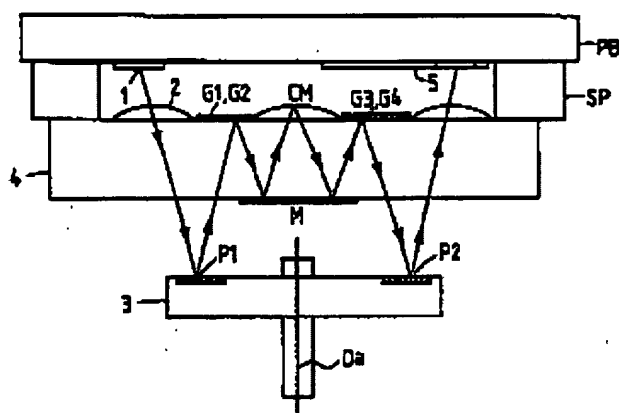
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 rejected under 35 U.S.C. 102(b) as being anticipated by Ishizuka (5,498,870).

Regarding claim 1, Ishizuka discloses in Figure 8A an optical resonator comprising: a first substrate (4) and a second substrate (PB) which face each other, the first substrate (4) having a flat main surface on the side facing the second substrate (PB) and the second substrate having a concave portion (CM, Column 5, Lines 33 – 35) at a central portion of said second substrate (PB) and a flat portion surrounding the concave portion on the side facing the first substrate (4), a radius of curvature and a diameter of the concave portion of the second substrate (PB) providing a desired cavity length and a diameter of a light beam to be captured in the optical resonator; a first reflective mirror (M) provided on the main surface of the first substrate (4); and a second

reflective mirror (CM) provided at least on the surface of the concave portion, a second reflecting mirror (PB) having a point where a normal of the first reflective mirror (M) on the first substrate (4) perpendicularly intersects the second reflective mirror (CM) on the second substrate (PB); wherein the main surface of the first substrate (4) and the flat portion of the second substrate (PB) are bonded to cause light to resonate reliably (Character SP, Column 6, Line 2 – 8).

FIG. 8A***Allowable Subject Matter***

Claims 2 – 8 are allowed.

The following is an examiner's statement of reasons for allowance: Claim 2 recites a laser oscillator structure including the specific structure limitation of *single-*

longitudinal-mode oscillation is achieved when the longitudinal mode interval is more than about one-fifth and less than several times the width of the emission spectrum obtained by the solid-state laser medium, which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

Claim 5 recites a laser oscillator structure including the specific structure limitation of *the free spectral range $\Delta\lambda_{FSR}$ of the laser resonator is larger than the half-width at half-maximum $\Delta\lambda$ of the emission spectrum of the solid state laser medium,* which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant argues the prior art lacks: *concave portion of the second substrate is located at a central portion of the second substrate and that the radius of curvature,*

diameter of the concave portion of the second substrate provides a desired cavity length and a diameter of a light beam to be captured in the optical resonator and second reflective mirror is said to have a point where a normal of the first reflective mirror in the first substrate perpendicularly intersect the second reflective mirror on the second substrate. The examiner disagree with the applicant arguments since the prior art does teach the second substrate (PB) having a concave portion (CM, Column 5, Lines 33 – 35) at a central portion of said second substrate (PB) and a flat portion surrounding the concave portion on the side facing the first substrate (4), a radius of curvature and a diameter of the concave portion of the second substrate (PB) providing a desired cavity length and a diameter of a light beam to be captured in the optical resonator; and a second reflective mirror (CM) provided at least on the surface of the concave portion, a second reflecting mirror (PB) having a point where a normal of the first reflective mirror (M) on the first substrate (4) perpendicularly intersects the second reflective mirror (CM) on the second substrate (PB) (see Figs. 5A-5B and 8A) as stated in the rejection above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (571) 272-1940. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Sun Harvey can be reached on (571) -272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

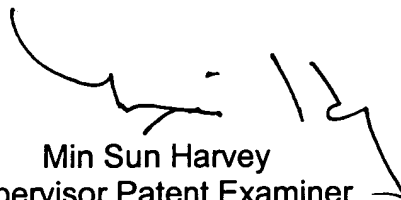
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Delma R. Flores Ruiz
Examiner
Art Unit 2828
DRFR/MH
October 16, 2006



Min Sun Harvey
Supervisor Patent Examiner
Art Unit 2828